Docket No.: CL001099 CIP DIV2
Serial No.: To be assigned
Inventors: Douglas RUSCH et al.
Title: ISOLATED HUMAN KINASE PROTEINS...

```
   1 TCGCGGCCCA GGTGGTGCGG GCGGCCCTAG CCCGGCTGCG GAGCGCTGCG
  51 CGAGCGGCGG GCTGGCTGAC CCCGAGGGAC CCCCAGCGCA GCGGGTGCGG
 101 CGATGATCCT GGAGGAGAGG CCGGACGGCG CGGGCGCCGG CGAGGAGAGC
 151 CCGCGGCTGC AGATATCTAG GAGAAAACCC AGGAAAACAC GTGTGAGCTC
 201 TTTACGGGGA AGACGGGAAG GCCTGAGAGA CGTGTGTGCG TGGAGAGGGT
 251 GTCGGGTCCA CAGAGGGGAA GACCCAGTGC GTGTGCACGT TGGCCCCATG
 301 AATCCGCAGC TTCATGCAGT GGGCTGTGAC TCCCTGACGC AGATCCAGTG
 351 CGGCCAGCTG CAGAGCCGCA GGGCCCAGAT TCACCAGCAG ATTGACAAGG
 401 AGCTGCAGAT GCGGACGGGC GCTGAGAACC TCTACAGAGC CACCAGCAAC
 451 AACCGGGTGA GAGAGACGGT CGCCCTGGAG CTGAGCTACG TCAACTCCAA
 501 CCTGCAGCTG CTGAAGGAGG AGCTGGAGGA GCTCAGCGGT GGCGTGGACC
 551 CTGGCCGGCA TGGGAGCGAA GCTGTCACTG TCCCCATGAT CCCCCTGGGC
 601 CTGAAGGAGA CCAAGGAGCT GGACTGGTCT ACACCGCTGA AGGAGCTGAT
 651 CTCAGTGCAC TTTGGAGAGG ACGGCGCCTC CTACGAGGCA GAAATCAGGG
 701 AGCTGGAGGC CCTGCGGCAG GCCATGCGGA CCCCCAGCCG GAATGAGTCG
 751 GGCCTGGAGC TGCTCACAGC CTATTACAAC CAGCTGTGCT TCCTGGATGC
 801 GCGCTTCCTC ACCCCTGCCA GGAGCCTCGG GCTCTTCTTC CACTGGTACG
 851 ACTCGCTTAC TGGGGTCCCG GCCCAGCAGC GTGCCCTGGC CTTCGAGAAG
 901 GGCAGCGTTC TCTTCAACAT CGGTGCCCTC CACACGCAGA TTGGGGCGCG
 951 CCAGGACCGC TCCTGCACCG AGGGTGCCCG CCGCGCTATG GAGGCCTTCC
1001 AGAGGGCCGC TGGGGCCTTC AGCCTCCTGA GGGAGAACTT CTCCCATGCG
1051 CCGAGCCCAG ACATGAGCGC TGCGTCCCTC TGCGCACTGG AGCAGCTCAT
1101 GATGGCCCAG GCCCAGGAAT GTGTGTTTGA GGGCCTCTCA CCACCTGCCT
1151 CCATGGCCCC CCAAGACTGC CTGGCCCAGC TGCGCCTGGC GCAGGAGGCC
1201 GCCCAGGTGG CAGCCGAGTA CAGGCTAGTG CACCGGACCA TGGCCCAGCC
1251 ACCCGTCCAC GACTACGTGC CTGTCTCCTG GACTGCCCTG GTGCATGTCA
1301 AGGCCGAGTA CTTCCGCTCC CTGGCCCACT ACCACGTAGC CATGGCCCTC
1351 TGCGACGGCT CCCCAGCGAC CGAGGGAGAG CTCCCCACGC ACGAGCAGGT
1401 CTTCCTGCAG CCCCCCACCT CCTCTAAGCC CCGAGGCCCT GTGCTGCCGC
1451 AGGAGCTGGA GGAGCGCAGG CAGCTTGGCA AGGCACACCT GAAGCGTGCC
1501 ATCCTGGGGC AGGAGGAGGC GCTGCGGCTG CACGCCCTGT GCCGCGTCCT
1551 GCGCGAGGTG GACCTGCTTC GGGCTGTGAT CTCCCAGACG CTGCAGCGCT
1601 CACTGGCCAA GTATGCGGAG CTCGACCGTG AGGATGACTT CTGTGAGGCT
1651 GCCGAGGCCC CGGACATCCA GCCTAAGACC CACCAGAAGC CAGAGGCCAG
1701 GATGCCACGC CTGTCCCAGG GGAAGGGGCC TGACATCTTC CATCGGCTGG
1751 GGCCCCTGTC TGTGTTCTCA GCCAAGAACC GGTGGCGGCT GGTGGGGCCC
1801 GTCCACCTGA CCCGAGGAGA GGGCGGCTTT GGCCTCACGC TTCGGGGAGA
1851 CTCGCCTGTC CTCATCGCTG CCGTCATTCC AGGGAGCCAG GCCGCGGCGG
1901 CTGGCCTGAA GGAGGGCGAC TACATTGTGT CAGTGAATGG GCAGCCATGC
1951 AGGTGGTGGA GACACGCGGA GGTGGTGACG GAGCTGAAGG CTGCGGGAGA
2001 GGCGGGCGCC AGCCTGCAGG TGGTGTCGCG GCTGCCCAGC TCTAGACTGC
2051 CCAGCTTGGG GGACCGCCGG CCCGTCCTGC TGGGCCCCAG GGGGCTTCTA
2101 AGGAGCCAGA GGGAGCATGG TTGCAAGACC CCGGCATCCA CGTGGGCCAG
2151 TCCCCGGCCC CTCCTCAACT GGAGCCGAAA GGCCCAGCAG GGCAAGACTG
2201 GAGGCTGCCC CCAGCCCTGT GCCCCAGTGA AGCCAGCTCC GCCCTCATCC
2251 TTGAAGCACC CAGGGTGGCC GTGAGGGCCA GGATCCCTGC ACGCCCTCAG
2301 CCCTGGCTCC AGCTGGCAGC AAGCACCGAG CATGCCCTCC CCACCCAGAG
2351 GACCTCCGGG CAATGCCTGT CCCGCCTCAT GCTGGAGGCT GCCTCGGGCA
2401 CCTGCCTGCC CATTAAAGAC TGGTCAGACC TGTCTGAAAA AAAAAAAAAA
2451 AAAAAAAAAA AAAAAAAA (SEQ ID NO:1)
```

FEATURES:

5'UTR: 1-102
Start Codon: 103
Stop Codon: 2272
3'UTR: 2275

FIGURE 1A

Docket No.: CL001099 CIP DIV2
Serial No.: To be assigned
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Title: ISOLATED HUMAN KINASE PROTEINS...

Homologous proteins:
Top 10 BLAST Hits

	Score	E
CRA|18000005019652 /dataset=nraa /length=643 /altid=gi|6680085 ...	930	0.0
CRA|18000005229461 /dataset=nraa /length=718 /altid=gi|4868350 ...	393	e-108
CRA|89000000195700 /dataset=nraa /length=648 /altid=gi|7293132 ...	309	7e-83
CRA|163000000492107 /dataset=nraa /length=1345 /altid=gi|795920...	116	7e-25
CRA|18000005101898 /dataset=nraa /length=775 /altid=gi|7492978 ...	112	2e-23
CRA|18000005055009 /dataset=nraa /length=861 /altid=gi|3785952 ...	105	2e-21
CRA|18000004878869 /dataset=nraa /length=882 /altid=gi|466013 /...	105	2e-21
CRA|18000005242118 /dataset=nraa /length=816 /altid=gi|5103812 ...	104	3e-21
CRA|1000682341924 /dataset=nraa /length=868 /altid=gi|7019487 /...	99	2e-19
CRA|18000005212030 /dataset=nraa /length=867 /altid=gi|4416376 ...	98	4e-19

BLAST dbEST hits:

	Score	E
gi|9121454 /dataset=dbest /taxon=9606...	1207	0.0
gi|9344702 /dataset=dbest /taxon=960...	922	0.0
gi|6702051 /dataset=dbest /taxon=9606 ...	676	0.0
gi|12066980 /dataset=dbest /taxon=96...	672	0.0
gi|9098957 /dataset=dbest /taxon=9606...	672	0.0
gi|9202467 /dataset=dbest /taxon=960...	650	0.0
gi|8008394 /dataset=dbest /taxon=960...	628	e-177
gi|11295927 /dataset=dbest /taxon=96...	599	e-168
gi|4649738 /dataset=dbest /taxon=9606 ...	595	e-167

EXPRESSION INFORMATION FOR MODULATORY USE:
library source:
Expression information from BLAST dbEST hits:

gi|9121454	Eye retiniblastoma
gi|9344702	Placenta choriocarcinoma
gi|6702051	Germ cells
gi|12066980	bocio_tumor
gi|9098957	Pediatric pre-B cell acute lymphoblastic leukemia
gi|9202467	Kidney 2 pooled Wilm's tumors
gi|8008394	Uterus tumor
gi|11295927	Brain anaplastic oligodendroma
gi|4649738	Uterus well-differentiated endometrial adenocarcinoma

Expression information from PCR-based tissue screening panels:
Human leukocyte

FIGURE 1B

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Title: ISOLATED HUMAN KINASE PROTEINS...

```
  1 MILEERPDGA GAGEESPRLQ ISRRKPRKTR VSSLRGRREG LRDVCAWRGC
 51 RVHRGEDPVR VHVGPMNPQL HAVGCDSLTQ IQCGQLQSRR AQIHQQIDKE
101 LQMRTGAENL YRATSNNRVR ETVALELSYV NSNLQLLKEE LEELSGGVDP
151 GRHGSEAVTV PMIPLGLKET KELDWSTPLK ELISVHFGED GASYEAEIRE
201 LEALRQAMRT PSRNESGLEL LTAYYNQLCF LDARFLTPAR SLGLFFHWYD
251 SLTGVPAQQR ALAFEKGSVL FNIGALHTQI GARQDRSCTE GARRAMEAFQ
301 RAAGAFSLLR ENFSHAPSPD MSAASLCALE QLMMAQAQEC VFEGLSPPAS
351 MAPQDCLAQL RLAQEAAQVA AEYRLVHRTM AQPPVHDYVP VSWTALVHVK
401 AEYFRSLAHY HVAMALCDGS PATEGELPTH EQVFLQPPTS SKPRGPVLPQ
451 ELEERRQLGK AHLKRAILGQ EEALRLHALC RVLREVDLLR AVISQTLQRS
501 LAKYAELDRE DDFCEAAEAP DIQPKTHQKP EARMPRLSQG KGPDIFHRLG
551 PLSVFSAKNR WRLVGPVHLT RGEGGFGLTL RGDSPVLIAA VIPGSQAAAA
601 GLKEGDYIVS VNGQPCRWWR HAEVVTELKA AGEAGASLQV VSLLPSSRLP
651 SLGDRRPVLL GPRGLLRSQR EHGCKTPAST WASPRPLLNW SRKAQQGKTG
701 GCPQPCAPVK PAPPSSLKHP GWP (SEQ ID NO:2)
```

FEATURES:
Functional domains and key regions:
[1] PDOC00001 PS00001 ASN_GLYCOSYLATION
N-glycosylation site

Number of matches: 3
```
      1    214-217 NESG
      2    312-315 NFSH
      3    689-692 NWSR
```

[2] PDOC00005 PS00005 PKC_PHOSPHO_SITE
Protein kinase C phosphorylation site

Number of matches: 12
```
      1     16-18 SPR
      2    683-685 SPR
      3     22-24 SRR
      4     88-90 SRR
      5     33-35 SLR
      6     22-24 SRR
      7     88-90 SRR
      8    440-442 SSK
      9    556-558 SAK
     10    579-581 TLR
     11    646-648 SSR
     12    668-670 SQR
```

[3] PDOC00006 PS00006 CK2_PHOSPHO_SITE
Casein kinase II phosphorylation site

Number of matches: 8
```
      1    105-108 TGAE
      2    212-215 SRNE
      3    216-219 SGLE
      4    287-290 SCTE
      5    423-426 TEGE
      6    570-573 TRGE
      7    651-654 SLGD
      8    668-671 SQRE
```

[4] PDOC00007 PS00007 TYR_PHOSPHO_SITE
Tyrosine kinase phosphorylation site

```
      104-111 RTGAENLY
```

FIGURE 2A

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Title: ISOLATED HUMAN KINASE PROTEINS...

[5] PDOC00008 PS00008 MYRISTYL
N-myristoylation site

Number of matches: 11
```
      1         9-14 GAGAGE
      2        84-89 GQLQSR
      3       147-152 GVDPGR
      4       166-171 GLKETK
      5       274-279 GALHTQ
      6       291-296 GARRAM
      7       419-424 GSPATE
      8       469-474 GQEEAL
      9       594-599 GSQAAA
     10       601-606 GLKEGD
     11       664-669 GLLRSQ
```

[6] PDOC00009 PS00009 AMIDATION
Amidation site

              35-38 RGRR

[7] PDOC00016 PS00016 RGD
Cell attachment sequence

              581-583 RGD

Membrane spanning structure and domains:

Helix	Begin	End	Score	Certainty
1	583	603	1.094	Certain

BLAST Alignment to Top Hit:
```
>CRA|18000005019652 /dataset=nraa /length=643 /altid=gi|6680085
          /def=ref|NP_032190.1| GTP-rho binding protein 1 [Mus
          musculus] /org=Mus musculus /taxon=10090
          Length = 643
```

 Score = 930 bits (2284), Expect = 0.0
 Identities = 471/706 (66%), Positives = 520/706 (72%), Gaps = 72/706 (10%)

```
Query: 1    MILEERPDGAGAGEESPRLQISRRKPRKTRVSSLRGRREGLRDVCAWRGCRVHRGEDPVR 60
            MILEERPDG G GEES R
Sbjct: 1    MILEERPDGQGTGEESSR------------------------------------------ 18

Query: 61   VHVGPMNPQLHAVGCDSLTQIQCGQLQSRRAQIHQQIDKELQMRTGAENLYRATSNNRVR 120
                   P +      G  S  Q Q GQLQS RA++HQQI KEL+MRTGAENLYRATSN   VR
Sbjct: 19   ----PQDDGSIRKGYGSFVQNQPGQLQSHRARLHQQISKELRMRTGAENLYRATSNTWVR 74

Query: 121  ETVALELSYVNSNLQLLKEELEELSGGVDPGRHGSEAVTVPMIPLGLKETKELDWSTPLK 180
            ETVALELSYVNSNLQLLKEEL ELS  VD +   E +T+PMIPLGLKETKELDW+TPLK
Sbjct: 75   ETVALELSYVNSNLQLLKEELAELSTSVDVDQPEGEGITIPMIPLGLKETKELDWATPLK 134

Query: 181  ELISVHFGEDGASYEAEIRELEALRQAMRTPSRNESGLELLTAYYNQLCFLDARFLTPAR 240
            ELIS HFGEDG S+E EI+ELE LRQA RTPSR+E+GL+LL AYY+QLCFLDARF +P+R
Sbjct: 135  ELISEHFGEDGTSFETEIQELEDLRQATRTPSRDEAGLDLLAAYYSQLCFLDARFFSPSR 194

Query: 241  SLGLFFHWYDSLTGVPAQQRALAFEKGSVLFNIGALHTQIGARQDRSCTEGARRAMEAFQ 300
            S GL FHWYDSLTGVPAQQRALAFEKGSVLFNIGALHTQIGARQD SCTEG  A EAFQ
Sbjct: 195  SPGLLFHWYDSLTGVPAQQRALAFEKGSVLFNIGALHTQIGARQDCSCTEGTNHAAEAFQ 254

Query: 301  RAAGAFSLLRENFSHAPSPDMSAASLCALEQLMMAQAQECVFEGLSPPASMAPQDCLAQL 360
            RAAGAF LLRENFSHAPSPDMSAASL  LEQLM+AQAQEC+F+GL   PAS  P  C  QL
```

FIGURE 2B

Docket No.: CL001099 CIP DIV 2
Serial No.: To be assigned
Inventors: Douglas RUSCH et al.
Title: ISOLATED HUMAN KINASE PROTEINS...

```
Sbjct:  255  RAAGAFRLLRENFSHAPSPDMSAASLSMLEQLMIAQAQECIFKGLLLPASATPDICPDQL  314

Query:  361  RLAQEAAQVAAEYRLVHRTMAQPPVHDYVPVSWTALVHVKAEYFRSLAHYHVAMALCDGS  420
             +LAQEAAQVA EY LVHR MAQPPV DY+P SWT L HVKAE+F +LAHYH AMALC+
Sbjct:  315  QLAQEAAQVATEYGLVHRAMAQPPVRDYLPASWTNLAHVKAEHFCALAHYHAAMALCESH  374

Query:  421  PATEGELPTHEQVFLQPPTSSKPRGPVLPQELEERRQLGKAHLKRAILGQEEALRLHALC  480
             PA +GEL   E VF QP T +P GP LPQ  E+RR+L KAHLKRAILGQEEALRLH LC
Sbjct:  375  PA-KGELARQEHVF-QPSTPHEPLGPTLPQHPEDRRKLAKAHLKRAILGQEEALRLHTLC  432

Query:  481  RVLREVDLLRAVISQTLQRSLAKYAELDREDDFCEAAEAPDIQPKTHQKPEARMPRLSQG  540
             RVLR+VDLL+ V++Q L+RSLAKY++L+REDDF EA EAPDIQPKTHQ PE
Sbjct:  433  RVLRKVDLLQVVVTQALRRSLAKYSQLEREDDFFEATEAPDIQPKTHQTPE--------  483

Query:  541  KGPDIFHRLGPLSVFSAKNRWRLVGPVHLTRGEGGFGLTLRGDSPVLIAAVIPGSQAAAA  600
                     GPLSVFS KNRW+LVGPVH+TRGEGGFG TLRGDSPVLIAAV+PG QA +A
Sbjct:  484  --------GPLSVFSTKNRWQLVGPVHMTRGEGGFGFTLRGDSPVLIAAVVPGGQAESA  534

Query:  601  GLKEGDYIVSVNGQPCRWWRHAEVVTELKAAGEAGASLQVVSLLPSSRLPSLGDRRPVLL  660
             GLKEGDYIVSVNGQPC+WW+H EVVT+L++ GE G SLQVVSLLPS    G RR  LL
Sbjct:  535  GLKEGDYIVSVNGQPCKWWKHLEVVTQLRSMGEEGVSLQVVSLLPSPEPRGTGPRRAALL  594

Query:  661  GPRGLLRSQREHGCKTPASTWASPRPLLNWSRKAQQGKTGGCPQPC  706
                  +QRE G +TP T   P P+L WSRK +QGKTG  P PC
Sbjct:  595  W------NQRECGFETPMPTRTRPWPILGWSRKNKQGKTGSHPDPC  634  (SEQ ID NO:4)
```

Hmmer search results (Pfam):

Model	Description	Score	E-value	N
PF00595	PDZ domain (Also known as DHR or GLGF).	46.4	9e-12	1

Parsed for domains:

Model	Domain	seq-f	seq-t	hmm-f	hmm-t	score	E-value
PF00595	1/1	566	644 ..	1 ·	79 [.	46.4	9e-12

FIGURE 2C

Docket No.: CL001099 CIP DIV2
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```
   1 CCACCCTGTC TCAAAAAAAA AAAAAAAGGC CAGTCACAGT GGCTCACACC
  51 TATAATCCCA ACACTTTGGG AGGCCAAGGC AGGCAGATCA CTGGAGCTCA
 101 GAAGTTCAAG ACCAGCCTGG GCAACAGGGC GAAACCCTGT CTCAATTTTT
 151 TTTTCCTTTA TAAATTACAA AAGAGAAAAC GAGCATAAAG CAGCCCCATC
 201 AGCAATTATC ACCTCATCTG CAAAAGGTCC CGGCGCTCAC TGCCGTGCCC
 251 CTCCCGCCGC TGTCCAGTTC CCTGCCTGTC ACACCAAAAT TCTCCTCTAC
 301 TTTCTCACCT CCCATCCTTT CATTTTTCCC CCTAAATTTT TAAACTTCAG
 351 AAGTGCACAA TACACATGTA ACAAACCCAC ACATGTACCT CCAAATCTAA
 401 AATAATTTAA AAAACAAAA AGGAAACTCT AAATTTTTTG AGTGCAGTGA
 451 TACATTCTTG CTGTGCCAAA TCCAGTAACA CAGAAGCATG CAAAGAAAAA
 501 GGCAGCACCA CCCCCCTCCA ACACACACAC ACACACACAC ACACGCACAC
 551 ACGCACATAT GCACGCACAC ACACGCACAC GCACACACGC ACACGCACAC
 601 ACTCCAGCCT GGGCGACAAG AGCAAGACTC CATCTCAATA AATAAATAAA
 651 GAAAATAGTA ATTGAATATT TTCCTTCAGG AAACAGCACC CTGCAGGGAG
 701 GGGAAGTCTT ATGACCCTCA AAGTTTGAGA GGCCTCTCTTA ACTTCCCAAT
 751 GGCCTCTGTC TGCTGAACCA AGAAGCCTGC AAAACAAATA CGTAAGAACT
 801 GGATACCATT TCAGTCACAC ATGCTTGCTG ACAGTCACTG ATATGGTAAT
 851 GCCTCCTGTA CACATAGCTG ACTCTGAAGA CTGCTAAGAG GGTTTGGGTC
 901 TCTGCTGTAC AGGACCTTGG CAGCCTGCAA GGAGATGACT CACATGGAAG
 951 TCCCCACACA AGTGCACCCA GTGTGAACTT TGGAAGCATC GGCCCATGCT
1001 CAGGCCCACA GGTAAGATGG CCAGGAGCCC CTGCCCTTGA GGAAACTTGA
1051 ACCACAGAGC TGCTGGCGAA GGGGGTGGGT GAAGGTCTCA TGTAGCCTGT
1101 GTGATTCAGG CAGAAGTGAG AAGGACGGGT GGGAACCCAC CAAGTGGACG
1151 ACAAGCTGAA GGGCTCCCAG GGAGCAGACA CTTCAAGGGC CCCAAAAGGC
1201 CAGGAGAAAG AAAAAAAAAA GCCGGGTATG GTGGCTCATC CCTGTAATCC
1251 AGCACTTTTG GGAGGTTGAG GCAGATGAAT TGCTTGAGCC CAGAAGTTTG
1301 AGACCAGCCT GGGCCTGGGC AATGTGGCGA AACCCTGTCT CTACAAAATA
1351 TACAAAAATT AGCCGGGTGT GGTGGTGCAA GCCTGTAGTC CCAGCTATTC
1401 AGGAGGCTGA GGTGGGAGGA TCACATGAGC CCAGGAGGTG GAGGCTGCAG
1451 TGAGCTGTGA TCGTACCACT GCACTCCGGC CTGGGGAACA GAGTGAGGCC
1501 CTGTCTCAAA AGGCCAGGAG TGGAAGACAG GCCCTAGCCA GGAGGTTTCA
1551 CGTGGCTGGC AGGGGCCTTA TGAGAAGGCT GTTGCTGGGA GGGGCCTGCT
1601 GCAGATGGCT GCGGCAGACC ACGGAGCTTA GCCTTCAGGA TTTAGATCTG
1651 GGGATGACAG GCTCCTGTGT GCTTGTTGCG GAGCCGGGAG CACAGGCACC
1701 AGAATGATCC CAGGGCTCAG CTCCAAGGCT CCGCTGGGCC TGTGGTGGGG
1751 CAGTGAACGT GGACAAGACC TGGGCTTCAG AGGAACTTGA TGACCAGGAG
1801 CCGTGGTTAC CGCCTGTGCC CTGGCCTTCC TGCTCTTCAA AGGGTGTGTT
1851 CTGAGCTGAG GCGAGACCCA CACGAAATCC GAGCGGGCTC CGGAGTCACC
1901 AGACACCTAG GGAAGTATGG AAGGCCCGGA AGGACACACA CAGCCGGGTG
1951 AGCCCCGCAG GGAGCTGTGC AGTCTCAGGT CGTCCAGTCC TGGGGCTGCA
2001 GGCCAGTTCT CCAAGCAGGT GGTCCTGGAG GCAAGCTGGT TTTGAAAGTA
2051 GGTTCTGAAA ATAGGTCAGT CCAGGAAACA AGCTCTGGAA GTAAAGAGAT
2101 TCGGAAAGCA GGTTCGTTCT GGAAACAAGT TCTACAAACA GGTAGTTCTG
2151 AAAGCACGTG GGTTCCAGAG GCAGGTGCTA GAAGGATGTG GGTTCTGTAC
2201 GGAGGTTCTG GAGGGAGGCG GGTTCTGGAC GGAGGTTCTG GAAGGAGGCG
2251 GGTTCTGGAG GCCGGTTTTG GAAGCAGGAC GACACCGACA GAGGCGCCTC
2301 GGACTGGGGC CAGGCCTGGA GCCTCCGCTC CGCGGGCAGA GAGAAGAAAG
2351 CAGGCATTGT CGGAGGACTC ACACAAGCAC TTGTCCCTAA CAAAACCGTT
2401 TTTAAAAACC CCATTGTGAA CATTTTTGGA ACAAGCCTCT TAGAGGGTCC
2451 CGTTGCCGGG GTGACAGGAC GAAACGGCGC GAGCGGGCAG ACTCCTGGAG
2501 TCCCCGCAAA GGGAGCCGAG GAGCTAGGCG CGCCGAGTCC AGGTCCGCCC
2551 TGACTCTCAG CTTGGGACGT TCCGTATAGT TTTTTTCTCC GTTTCCCGAA
2601 CTTCTCCCGC ACGCTCAGCG GCCGCCGCGG CGCATGCGCA GTACAACCTG
2651 CCAGCCAGCC GCGGGCGTTC CGGCCGCGGT TGCCAGGGGT TACCGTCCCG
2701 CGGGCGGGCG GAGCTGGCCG TCCAGAGCCC GCCTTCCTGG AACTCTGGTT
2751 GGCTGATATA GCTGTCCGTC GAAGCGGCAT TGCCGCCTAT TGGGCAATGG
2801 CCAGCTTCGC ACGCCAGACC CGTGCCCCGC CCAGCCGCGC CGCGGGCCGC
2851 CCCCACTCAG GAGGGACAGT CGGGGACCGG CGCGGGCACT CAGGAGCCCG
2901 CGGCCCAGGT GGTGCGGGCG CCCTAGCCC GGCTGCGGAG CGCTGCGCGA
2951 GCGGCGGGCT GGCTGACCCC GAGGGACCCC CAGCGCAGCG GGTGCGGCGA
3001 TGATCCTGGA GGAGAGGCCG GACGGCGCGG GCGCCGGCGA GGAGAGCCCG
3051 CGGCTGCAGG TGCGCAGAAC TGGCGCGGCG GCGGGAGGAG GGGCCCGGAA
```

FIGURE 3A

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```
3101 TCCCGGCCTT TTCCTGCCCC CCCTCGAGGC GCGTTCCGGG CGCCCCCCTC
3151 CTACGTACTC ATTCGGCCCG GACGCAGGCA GGGAAACTGA GGCCAGAGCC
3201 TGCGTGCCCT CCTCCTCTGA GCTCGGTGGA GGTGCTTCCA GGCCACTCAT
3251 GTGAGCCGGG AAATGCGGAC AGCCAAAGTC TGGATCATCC TCACCGCTGA
3301 AGCGGGTTGG GGGGACGCCC TCCTCGTGTC CCCCTTCTGG GCGGATGTGG
3351 GGCTGGGATC TGTGAGCGCC CTCCCCACAC CCGCCATCGT GTTCCTTTCC
3401 GGCACCTGTA CAGCCTCCTT CCCTAGTTCG GTCCTCCCTC TGCATCCGCT
3451 CAGGAACTGC ATGCCCATTG GGTGCACTGG TAGCAGCGGG CAGCGAAGCC
3501 TCCTGGGTAT GGGAAACCGA GAGAGGTCTT CCCGGCTGGC CTCTTCTCAC
3551 TTCCCAAACC TCCTTCCCTT CTGAAGTCCC TAACCCGGGG TGCTGACTGG
3601 GCAAGTGGGA GGGGTGGGCA GGGCTGTGGA GACCTGCTGA GTCTGTGCCT
3651 GGGAAGGAGG GGACGTCTGT GGGCCTTGCT CTGCAGCCCA GAGCCTGCTT
3701 GTTCCCTGCG GACCAGCTCG AGGCTGCCCC AGTCCTCCTG CCAGGCCCTG
3751 GGCGCCCACG CCCGCCACGG GCTTTCAGCC GCGGGCTGCT CCTGCTCCTC
3801 GCCCCGGGTG AGCCTTTGAT AGCGCGCGGC CCTCCTCCCC TCTGGGACGT
3851 CAGACTGTGT TGTCCCTGGG CTGGTTCTAC TCGGCTTTGG TGTTTGGGGT
3901 TAGGTCTCCT AGAGGAGGAG GCGGTGCTAT CAGCCAGGGT TTGGCTTCAG
3951 GTCACTGGGC TGGTGATGCT GACCGTAGCC CTCAAGGTCG CCCTTCTTGC
4001 CCACCCCGAG GCGTGCCAGA GGCTGCAGCA CCTCCTGGGC ACTGGAGGGA
4051 AAGAGGCAGC CTGTGCCTGC CCCCTGTGAA CTTGCTCTGT CAGGGCGGCC
4101 ATGCCTGCAG GTGGCCTGGG ACGGCACATG TTGTTTTGGG TGGAATGTTT
4151 GGGAGGCTGT ACAAACAAGA TGTCCCAGAG GGCTCCGGAG GTGACGCTTT
4201 TCAGGCTGGG GGCTGTGCCT GGGCTCCCTG TCCTGGCCCT CCCTGGGCTG
4251 CCACCTTGGA AAGTTGGGGA GAAGCTGTTT CCAGGCTGCC GTGTCTCTCA
4301 CAGCGTCCAG AAATGACCCC ACAGTCAGGG TACTGGGGAG GGGCCCGTGG
4351 GAGGTGGCAG TGGGGCGGAG GCAGGCCCTG TGTCACACGC GCACCACTCA
4401 GGCTGTCCTG CCATCTGGAA AGTCTTCCCC GATGCCTGCT GCCGGGCTAG
4451 AGTGAGGCCT GTTCCACCCC CATCAGGCTG GCCCCCAAAC TGGCCCTAAA
4501 GCTCAGAGTT CAGTGGGTCA GGGGTCGGTC GTTCATCCAC TTAGAGGCCA
4551 CACCTGGGCC TGAGGCCCTG TGGACAGGTC TGGGTGACTT GTATTTGCCC
4601 CAGGCGTGAT GAGAGCAGGC TTCCAGCAAG CGCTTACCTG GTGCCAGGGC
4651 CAGTGCTACA GCTGGAGTCC TGCCATTGGT GCCTCCCAAG CCCTGGGCCT
4701 CAGCCCGTCT GATGAACAGG GTGAGTAAGT GGCCAAGGCT GCCAAGCTGG
4751 GAAGGGGAGA AGCCTGGCAC GGCCCAGGGT GGCCAACCCA GCTGCCGTCC
4801 CTCCCGCAGG GGCTGCAGGG GCTCCCGGGG GAGGACCACA AGGAATACAG
4851 CCTGGCTGTA TGCAGAAGGT TCTGTGGTTT CCTGGGGAGG CCAGTGGGAG
4901 AAGGGGGAGC AGGCTGCAGA GGGAGAGCGT TGGAGCAGCA GGTGGGCAGG
4951 GTGGCTGTGC CCCCCTCACC TGGTCTCCAG CATGCCGAGT GGGTCAGCCT
5001 GAGGTTCCCC AGCCTGGCTG GACAGGAGCA CCCTCTGGGT GCTGGTTACA
5051 GGTTCCCAGG CCCCTGCCCA GGTAGATTGG GCTCCAGGAA GAGGGGTGCT
5101 CAGGAAGCAC CAGTGCCTGG GTACCCCAGG GAGCATCAGA GAGAGTGGGA
5151 GTCCCTGCCG TGAGTGGCCA GTCTATGATT CCTCTGGCGT GCGTGCTGCT
5201 TATAGCCCTG TGTCCCAGGA GACACCTGTG CAGCAATGCC CTTTGAATTC
5251 TGTTCCCTCA TCAGTGGGGG GCAGAGATGG TGGGTCAGGT GGGTGCTGGG
5301 CTTCCACCCT CCTGGGGCTT CCAGTTCTTG CATTCAGGTG AGACTTCAGT
5351 GGGGGCAGAG GAGAGGGGTA CCTGAGATGG GTGGCTGTCA GCATACAGGG
5401 TGCCCAGGGC CAGGGCTCTG AAGGGAAAAA GCTGGTTTGC TCCAGGTGGG
5451 TGACCTCTCC CTGGGGACTG CCTGGCCCAG GGCCAGGGGA TCCTGGGGGA
5501 GAGTGGAGGT CTGGCCCTGC TCTGATGTTT TGCTGTTCCC AGACCTGGGC
5551 TGGGATAACT ATCTCTGCCT TTTGCCCGTC CCCAGGTCAG CCCCACTCTG
5601 GCCAGGGCCA CACTGTTTCC TCCTGGGCAG AGGAGCCCCA GTGTCAGGGT
5651 TGGGGGGCTG TTTCTCTGTT CTTCGTCCCT CTCCATCGAG GCATGGCCAG
5701 GCCCTTCATG TGTGGCTGCC TCTCGGGACC CCCACAGACC ACAGCCTCTC
5751 TGTCCTTTCC TAATGCAAGG CGGAAATGGC CACAGTGGGG TGTCAGGGCA
5801 CCGTGGACGT GGGGGTGGGG AGCTCCAGGT CACCTTTGTC TCCAGAGGGT
5851 GGGGAGGTTG TAGCAGGAGT AGGGGCCTGA ACGCCTGTGT CTATGCCCCT
5901 TCCACTGGGC TCAACCTTCA ACCCAGTGTG GAAAGTGGGG CATGGGCCGC
5951 CCACCTCCAA GGTCTACCCA GCCTCAAAGG TCCGGCTCGG GTCTGCTCCT
6001 CCGCCTGTAG GCCGGGAAGT CACTTGGCCT GCAGGGAGCA CTGCGGGTAG
6051 GGAGGCCGAG GAATGGACCA GGCCCACAGC AGGTGCCTGT GGGGCTCCAA
6101 GGGGCCAGGC TCCCCGCAGC TCTCCTGGGG CCAGGAGGGG AGCAGGGACC
6151 TGGCTGGGTG TCTGATGCCC GTCGCACAGC CAGAGCCCTT AAAGCTGCTG
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FIGURE 3B

Docket No.: CL001099 CIP DIV2
Serial No.: To be assigned
Inventors: Douglas RUSCH et al.
Title: ISOLATED HUMAN KINASE PROTEINS...

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6201 GAGCCTTGCA GCGGGGCCTT TGCGGGGAGG GGGTGTAGCT GCGGTGGGTG
6251 GCACGGGGGT CTCCTAGGTA CTGGGCAGAG GCCCTCGAGG TGGTAGCGCC
6301 GGTGGGAAAG GTAGGGATGG GAGGCGGGGG TGGGCGGGCC TCAGGTTCAG
6351 GGAGCTTCTC AGATCTGAGG CGCCCATGCC CCTCTCCCAC CTGTGGGCCT
6401 CTCCAGCCCG AGTCCCTGAA GCAGCTCTGG AGGTAATTTC TTTTCTGGAG
6451 GAGGCGGGAG TGAGAAACGG GAGCAGGGTG AGGGTTCCCA AGTGCACATC
6501 GGCCCGTCCG CTGCTGGGTG GTGTCCACGG GGGCAGGGCT GGGCTGGGGG
6551 AGGCCAGGGT CCTGGGCCGG CACACCCTCC TTCCGGCTGC CTGTGTCCCT
6601 CCCTCCAGCT GCCTGTGTCC ATCCCTCCGG CCGCCTGTGT CCCTCCCTCC
6651 GGCCCCTAAG CGCCAACTCA TCTTCAGTTC AGGGACCTCC GTCAGGCTCC
6701 CTCACCCCAG CACTCAGCAG GAGGCTGCCG GCCTGGGTGT CCAGGGGATG
6751 GTGCGGGTGT CCAGCAGACA GTACAGGGGT TTGGGGGATG GTACAGGTGT
6801 CTGGGGGATG GCGTGGGTGT CCAGCAGATG GCGCAGGGGT TTGGGGGATG
6851 GCACAGGTGT CTGGGGGACA ATGCGGGGGT TTGGGGGATG GCGTGGGTTC
6901 CAGGGGATGG TGCAGGGGCT TGGGGGATGG TGTGGGTTCC AGGGGACCGT
6951 GTGGGGGTTT GGGGATGGCG TGGGTTCCAG GGGATGGTGC AGGGGCTTGG
7001 GGGATGGTGT GGGTTCCAGG GGACGGTGCG GGGGCTTGGG GATGGCGTGG
7051 GTTCCAGGGG ACGGTGTGGG GGTTTGGGGA TGGCGTGGGT TCCAGGGGAC
7101 GGTGCCTCAT CCTCCAGTCT CTGTCTCTGC CTTCCCATGG CCACCTCCAT
7151 GTGACTGTGT TCAAATTCCC CACCTCGTAT AAGGACCCTT GTCACTGCGA
7201 TTAAGGACCC CCTACTCCAG GGTGGCCTCA TCTTAACTCA TTATATCTGC
7251 AAAGACCCTA TTTCTAGAAA AATTGCAGTC ACAGGTACTG GGAGTCAGGA
7301 CTTGAACCTG TCTTTTGTGG GGACACAATT CACCCATAAT AGATGGTCAC
7351 CCGCTCAGCT GGCTGCTGTG ATTTTGGGGG GCTGGACGAG CAGGCCTTCT
7401 GTCTAGGAAA TCAAACCTTT CTTGTATAAT GGGAATAAAC TAATTAAAAT
7451 GCACACAAAG ATCTCGTTCA CATTAGCAAA AAGAACTCTC TCCAGATATC
7501 TAGGAGAAAA CCCAGGAAAA CACGTGTGAG CTCTTTACGG GGAAGACGGG
7551 AAGGCCTGAG AGACGTGTGT GCGTGGAGAG GGTGTCGGGT CCACAGAGGG
7601 GAAGACCCAG TGCGTGTGCA CGTTGGCCCC ATGAATCCGC AGCTTCATGC
7651 AGTGGTAGGT CAGTTTCATG GTGGCAAGAT TCACCTTCAG ACGCCACAAG
7701 GTCCTGGGGA AGAAGAGGTC CTGTCTCCCG ACAAGGGCGG GAAGCAGTCC
7751 CAGGAGCCAC CAGAGGCCTT GTCTTGCTGC TGACTGGCAG AAATGGCCAG
7801 GTTGGCCACG CCTGACTCAG ACCAGGCTCG CCCCAGGGCT GGGTGGGAGT
7851 CAGTGTCCCT GAGCAGTGAG CCCTGAGCAG CACTGTGGGT CTCAAAGCAT
7901 GGAAGGAGTG GGTGCTGGAG AGGCAAGCCA GCCAGCCCAC GCCTGGGAGC
7951 CCACCCAGGG GACAGCCACA GGTAGCTGCA AATAATCTTG TCCGGGTGGA
8001 GACCCAGGCA TTCCCACATG GCCACGGGGA AGAGTGGGGG TTGGGAGGCC
8051 ATGGTGAGAG GGAGGGACAC GTGAGGATCA TGTGGGCAGG ACCCCAACAC
8101 CACAAGGGTG GGGTGGGCTG AGGCATGAAA CTGGATCTCC CTAGAGTGAA
8151 ATGTAAGCTC CAGCCACGCTG GCACCACTGA CGACACAGGA GCCATCAAAG
8201 TCCAGAAGGG GCCCCGCTGG GCACGCCCCA CTCTTTCGCC ATGGCTGGTG
8251 CTGGGCAGGG CCGCGGGGCT GCAGTCTGGG TGCAAGGCTC AGAGTCATTT
8301 CTCTGTGGAT AGGGAGGGCA CGGGTGTGCG TTCGCTTCGA GAACCATTCC
8351 CAAAGTCAGA CCGCAGCCTC TGCACCAACC ATCGGGGGCC AGTGGCCGCC
8401 CCCAGAGCCT CAGGGACCCT GTCCTTTGAG CCCACGCCTA AACCCACATG
8451 GGAATGATTT GGAGGCGTGG GTGAGTTGGA TGGGAAAAAA ATTGGGAGGG
8501 GCAAGGGGGG GATCCAGAAT GAAATCCAGA AGCGCAGAAG GAAGGCTGTG
8551 AGGAGCAGTG GGCCGCCTCC TGCAGGGCTC CCGGAGCCCC TACTTGTCCA
8601 GGCTGCCTGG TGAGACCCTG GCTTCTGGTG TCCTTGGCAG GTGCCAGCCT
8651 CCCCCGCTGA CCCCCATCAC GAGTCAGCAG CTTACCCCAC CGACCACGTC
8701 CTTCTGCATT GACTGCCTCC TGTCCTGCTC TGGCCAGGCC TGTGTTCACA
8751 CTAGTTCTGT CCAGCCCCTC CCTGTGAGGC CAGCTCCAGC CCCAGCGCAT
8801 GGTGACCATC CCGTTACCCA TGGGCAGGAT GCACTCCTCT CAGTGGCTGG
8851 CGAGGCGCAG CCTGGTGCGG GCGCCACGGG GTCGGGCTGT GATCGCCTGT
8901 GGCCTCCCTG CAGGGCTGTG ACTCCCTGAC GCAGATCCAG TGCGGCCAGC
8951 TGCAGAGCCG CAGGGCCCAG ATTCACCAGC AGATTGACAA GGAGCTGCAG
9001 ATGCGGACGG CGCTGAGAA CCTCTACAGG TCAGTGCTTG AGACTGCCCG
9051 GCCCCGGGAG CAGGGCCCAC CTGGGTGAGG GGGCAGGAC AGCCACGCAG
9101 GCAGATGTCT GCCCCATGGC CGGGTCACAG AGACAGGTGC ATGAGCAGCT
9151 GGGTCCTGGT GGGCACGTAG TACACGTGAT GCTCAGCCAT GACCCTCACA
9201 GACCTGCCTC CGTGGGCCTC TGTGCTGGGC TGGAGGTGCC AGGAAACCAG
9251 TGTCCCTGCC GGGTGTGCAG CTTGGGAAGC CCCAACAGTG CACGTGGGGG
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FIGURE 3C

Docket No.: CL001099 CIP DIV2
Serial No.: To be assigned
Inventors: Douglas RUSCH et al.
Title: ISOLATED HUMAN KINASE PROTEINS...

```
 9301 CTTCTCAGAA GAGGCATGGT TGAGGCTGAG CTGTGGCAGG TGACGGCGCG
 9351 TCCCAAGGTT GGGGACCTGG GAGGGGGTGG AAGACCTGGG CTGCCTCTTC
 9401 CTTAGAGCAC ACCGCCTGTG TGCCACACAT GTGCGTGTGA GTGCCCCTCG
 9451 GTCCCCTTAG CACCTGCTAC CTCGCTGCCC CCATCCTGGC CTTCCCTGGG
 9501 GACCTCCGGT CCCTTTGCCA GGCCCTGATG CAGGCACAGA GAGGTGTGTG
 9551 GCTCTCACCC ACCATCCAAG GAGTGATGTT TGAGTGCTGT CGAGGGCTGT
 9601 ATGAGCCCCA AAGAAAGCCG TGGTGCTGAG GGAGGTGCCC CCAGGCCAGA
 9651 GTCGGAACAT GCAGGTGCTG GGGTCGGGGT GATGAACTGT AGGGGGCATC
 9701 ACCTGTGAGC CCCCGGATCC CACTGCTGCC CCTGCCCCAC CCATGGGGGG
 9751 CAGACCCTGT CAGCGACGTC CTCTGCAGGG TGGGCTTGGA GCTTTGACAG
 9801 GTCAGCTGGC AGGACGGCTG CAGTGGGCAC GGGGCCTTTG GCTCTGCCTT
 9851 GGGGCTGGGC TTTCAACTGC CGCGGCCTCC CTCAGAGCCA CCAGCAACAA
 9901 CCGGGTGAGA GAGACGGTCG CCCTGGAGCT GAGCTACGTC AACTCCAACC
 9951 TGCAGCTGCT GAAGGAGGAG CTGGAGGAGC TCAGCGGTGG CGTGGACCCT
10001 GGCCGGCATG GGAGGTGCGG GTGGGGGCCG GGACAGCACG TGCGTGTATG
10051 TGTGTGCACG TGTGCGTGTG TGTGTGCATG TGTGTGCACG CATGTGTGTC
10101 TCTGTGTGTA TATGTGTGCA TTGTCTGTGT GTGTGCGTGT GTGCATGTGT
10151 GTGCATGCAT GTCTGTGCGC GTGTGTCTGT GTGCATGTGT CTGTGCATCT
10201 CTGTGTGTGT GCGTGTGTCT CTGTGTGTAT ATGTGTGCAT TGTGTGTGTG
10251 CATGTGTGTG TGCATGCGTC TGTGTGCGCG TGTGTCTGTG TGTCTGCATG
10301 TGTCTGTGTG TGCATCTCTG TGCGTGTGTC TGTGTGCACG TGTCTGCGTG
10351 CGTGTGCATG TCTGCGTGTA TGTGGGTGTG TGTTTGCCTC TATGTGTGCG
10401 TGTATGCACG TGTGTCTGTG TGTGTCTGTG TGTGCGTGTG TGTGTGTGTC
10451 TGCACGTGTG TGCATATATG TGTGTGCGTG CGCATGTGTG TCTGCATGTG
10501 TATGCACGCA TGTGTTTGTG TGTGTGTGTG CGCGTGCATG TGTGTGTCTC
10551 TGTGTGTGTG TGTTTGCTTT TGGGGCGGTT TAGGACGGTG GGGGGTGGTG
10601 CACAGGTGCA AGGATGCCCC CCAGGACACA GGCGCACGTG CACACCCATG
10651 AGGGAGGGAG GCACCCTGTG CCACAGAGCC CTAGGAGTGG ACCCCGGGCT
10701 GCCGTGGGCA GCAGGGTTTG GCCTTACAGT CTGAAGTCGA TGCTTCTGGT
10751 TACAGCGAAG CTGTCACTGT CCCCATGATC CCCCTGGGCC TGAAGGAGAC
10801 CAAGGAGCTG GACTGGTCTA CACCGCTGAA GGTAGGTACT GGCCTCCAAG
10851 CTCTGAGATA CACGGCCCTG CCCTGGGACC AAGGGGGTCT TGGAGGCTTT
10901 CTGGTCCAGC TGTCTGGTTG AACAGATAGG GAAACTGAGG CCCAGAGGGA
10951 GGGAGGCTTA AAAGGGACGC AAGGGACCTG GCAGAAATGG CCACAGGGAC
11001 CCAGCCTCTG CTGCGTTCAG GGCCCCGCTG GTGCCTGCGC CCCAGGCCGG
11051 GGCTGATCCC ATAGAGTGGG TGTGAACATG TGCCCTACCC TCGGATGGGC
11101 AATGCCCTAG GAGGATGGGG CCTGGAAGCC CCAGCCGGAG CACAGGGTAC
11151 AGGCTCGCCC ATGGAGGGCA CCACTGGCTT GGGGCCACAC ACCCAGCACT
11201 GGCTCACGAG GGTCCTGGGG AGAGCTAGAA CAGACTGGCA CTGCCTGGCA
11251 GGGCCCCACG GGAGCCACTG ACTGTGTTCC GTGTCCGAGT CACTGAGTGG
11301 CAGATGGCAC CTGCCTCCCG GCCACGGGGA TGAATAAGGA AACGCACGTA
11351 AAAGTAGCGC TGAGTCTCCA GGCCCCGCTT CTGTGATGGG GTGGGGAAAC
11401 CCCAGGGCCA CAGGGGCTCC GACCCGCATC AACCCACCAG GCCCCTCCAT
11451 ACACATTGGC CCCCAGCCCT TCTCTGGGGC TTCCACTGAG GGGCCCAGGG
11501 CCCCCACGCT GCATGGCAGC CAGCCTGCTC TGCGGCACAG ACCCTCCCTC
11551 CACCATGAGT CTTTTCCCAA GGTGGGTTGG GAGACCTCAG GGAAGGAGGC
11601 CAGGCACAGG GGTACTGTGG ATGCCAACAC CTGCCCCCCA TCAGGAGCTG
11651 ATCTCAGTGC ACTTTGGAGA GGACGGCGCC TCCTACGAGG CAGAAATCAG
11701 GGAGCTGGAG GCCCTGCGGC AGGTGTGTGG TTCCCCCGCC CACCCACCCT
11751 CCTGCAGCCC TGGGAGACAC ATGCAGAGGC TGAAGCTGAA GTCAGGAACA
11801 GACAGAGGAG CTCAGCGTAG ACATCTCGAG GACGTGGGGA GACGGGCGCA
11851 CCAGGGGCCC TGTGTGTCCA GACCCAGCCA GGGGGCGTGG AGGGGCTCCC
11901 AGGTGGCTCC GGTGCCGCAT GCTGCTGGCC TTCGGGAGTC ACGGCTGCCC
11951 AGGGCCCCAC TGGCTTTGCC TCCCCGCCCC CCATGGTGCT GGTGCCCATG
12001 GGACTTCCCA GGGCAGTGTG TGTGAGTGGG GTGGGCCAGG CGGGTGGGGGC
12051 CCAGTGGCTC CTGCCCTGCA GGCCATGCGG ACCCCCAGCC GGAATGAGTC
12101 GGGCCTGGAG CTGCTCACAG CCTATTACAA CCAGCTGTGC TTCCTGGATG
12151 CGCGCTTCCT CACCCCTGCC AGGAGCCTCG GGCTCTTCTT CCACTGGTAG
12201 GGGCTCTGCG GGCGGAGGCA CCCTGGGGAG GGGAGGCCCA GCTGCGGGAA
12251 CCGTGGGAAC TCCACCCAGC CTGACCCAAC ACTGCAGGTA CGACTCGCTT
12301 ACTGGGGTCC CGGCCCAGCA GCGTGCCCTG GCCTTCGAGA AGGGCAGCGT
12351 TCTCTTCAAC ATCGGTGCCC TCCACACGCA GATTGGGGCG CGCCAGGACC
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FIGURE 3D

Docket No.: CL001099 CIP DIV2
Serial No.: To be assigned
Inventors: Douglas RUSCH et al.
Title: ISOLATED HUMAN KINASE PROTEINS...

```
12401 GCTCCTGCAC CGAGGGTGCC CGCCGCGCTA TGGAGGCCTT CCAGAGGGCC
12451 GCTGGTGAGG GCGGCCCGGG CCGCGGTGGG GCACGGCGCG GTGCCAGGGT
12501 GTTGCAGAGC CCCTTTTGCA GGGCAGGAGC TGGGGAGTGG TTAGGACATC
12551 AGTCCCTCAG GTAGGGGGAG TGAGCACATC AGGTCCATAT GTGTCCCAGG
12601 AGCATCCCTA GCTGGCCGCC CTGAGTGCTG CATGGGGCAG AGATGGGCAG
12651 GTACAGGGCC CTGCCTGTGT GAGCACCCCT CCCTCCGCAG GGGCCTTCAG
12701 CCTCCTGAGG GAGAACTTCT CCCATGCGCC GAGCCCAGAC ATGAGCGCTG
12751 CGTCCCTCTG CGCACTGGAG CAGCTCATGA TGGCCCAGGC CCAGGAATGT
12801 GTGTTTGAGG GCCTCTCACC ACCTGCCTCC ATGGCCCCCC AAGACTGCCT
12851 GGCCCAGCTG CGCCTGGCGC AGGAGGCCGC CCAGGTGAGC TCGGGCACCC
12901 GTGTCAGGAT GCAGGGGGTG GGGCCGAGCT GGGGTCAGAG CCCAGGTCCA
12951 GGCATGCGTG AGCTCTCCCA CCTCCTTCCT TGTGTGTCAG CCCCGAGCCA
13001 GCTGTTGTCC TGCTCCCTGG GGGGGCTGGT CAGGAACCTG GGGACCCGAG
13051 CCTCTGCCTC CAGGGGATGG CACAAAGCAG CAGGAACTGA GGTGCCAGGG
13101 AGGCTGCTGG GATGGTGGTC GGAGCAGGTG GAGGCTGGGT AGGGAGAAGC
13151 AGGCACCACC TGGAGAGTGG GAGGCCCTCG CGTGCCTGCC ACATCCACCG
13201 GCAGGTGGCA GCCGAGTACA GGCTAGTGCA CCGGACCATG GCCCAGCCAC
13251 CCGTCCACGA CTACGTGCCT GTCTCCTGGA CTGCCCTGGT GCATGTCAAG
13301 GCCGAGTACT TCCGCTCCCT GGCCCACTAC CACGTAGCCA TGGCCCTCTG
13351 CGACGGCTCC CGTGAGTGCC CACCGCACTT GCCCATGGTA CTGCCAAGGC
13401 CCCCCCGCGC AGGGCTCACA GCCTCTCTGT CCCCCAGCAG CGACCGAGGG
13451 AGAGCTCCCC ACGCACGAGC AGGTCTTCCT GCAGCCCCCC ACCTCCTCTA
13501 AGCCCCGAGG CCCTGTGCTG CCGCAGGAGC TGGAGGAGCG CAGGCAGCTT
13551 GGTAAGGCGC CCATGGGTGG AGTGCCCTGG GGCTCAGATG GTCACCAACG
13601 GTGGCAGGGT GTCCCCCACC ACCCTCATGC TGTTTGCCAC CTGCTGTCCC
13651 CGTGCTGACG AGTTGGGCCA CCTACCTATC CCTGGATGGC CTGTGCCTGA
13701 TGGGTGACGG CCCAGCGCAG GGGCCCCAGG AGTGCTGGGC AGCCTCTGAG
13751 CAGGTGGGAG ACCACTGGGA GCAGCTCATC CCTGGCCCCT GCTTTGCACG
13801 TGGCAGAGCC CTCCTGCACA GCCAGCTCCT CACCCCCGTG GCGCGCACCC
13851 CCAACGAAAG TGGCTGTGAT GAGCCCCACA GCCCTGGCGT TGCCCACTCC
13901 TTCTGCCACG TCCCAGGGCC CACGGGCCCA CATGGTGTGT GACATCCCAG
13951 TGCCCCGCGT GCAGGCAAGG CACACCTGAA GCGTGCCATC CTGGGGCAGG
14001 AGGAGGCGCT GCGGCTGCAC GCCCTGTGCC GCGTCCTGCG CGAGGTGGAC
14051 CTGCTTCGGG CTGTGATCTC CCAGACGCTG CAGCGCTCAC TGGCCAAGTA
14101 TGCGGAGCTC GACCGTGAGG ATGACTTCTG TGAGGCTGCC GAGGCCCCGG
14151 ACATCCAGCG TGAGCAGCCA GGGCCTGTCT GGGTGGCTGC ATCCCTGGCC
14201 AGGGTGGGGG CCTTCGTCCT GGAGAAAGGG AGGCTGATTG CATTAAAGAT
14251 GCAGTCACCA CGATGAATTA AACAGCAGTA GCACTTTCCA GGCCACGATC
14301 ACAGGGACCC ACAGAGCTGC TGGGCCCTTC AGGGGCCTGG GGGATGACCA
14351 CGCTCCTCAG CACCTCCCTC CCTGCACTGG CCTCCTACCC TGAGGGGAAG
14401 CCCACAGACC CAGGACAGGC ATGGCTGGGA CTTCAGGGAG GGATTTTGGG
14451 AGCCACTTGG GGCAGAGGGG GCTGTGTGTT CAGGGCACAC CTGGGGCAGC
14501 TCCTCCCACC ATTGCAGAGT GGCCAGGCCT GGAGGTCAGA AGCGGGGCCT
14551 GTGTGCACTC AGGGTCATGC CCTGCGCCCT GGAAAATCCC CGAGGCAGGT
14601 CTCCACAGTC TCCCAGCTTA GCTCTGCTCT TACACCCTCT CAGCTAAGAC
14651 CCACCAGAAG CCAGAGGCCA GGATGCCACG CCTGTCCCAG GGGAAGGGGC
14701 CTGACATCTT CCATCGGCTG GTGAGCACAC CCGTCCCCAG GCACCGCCCA
14751 GCATGGGCAG CTTGGGCTGT GTGGCTCTGA CCAGCACATG GCCTCAGACA
14801 GGCCATTGAT GGTGGTCCAG CCCTCCCCAC CCACCTTGTG GAACCCCACG
14851 GTGTCCCTCG GTGCACAGGT TGGATGGATG TGCTAGTCAG GTGGGGTCTC
14901 CTCAGTGTGT GGCCCAGCTG GGCCTCTGAC CTCTGAGCCC CTGCCAGGGG
14951 CCCCTGTCTG TGTTCTCAGC CAAGAACCGG TGGCGGCTGG TGGGGCCCGT
15001 CCACCTGACC CGAGGAGAGG GCGGCTTTGG CCTCACGCTT CGGGGAGACT
15051 CGCCTGTCCT CATCGCTGCC GTCATTCCAG GGAGCCAGGC CGCGGTAAGG
15101 GCCCCGCCGG CCCCCTGAGG CTGAGTCCTT GGTGCCAGCC AGGGTGTCCT
15151 GTCCCCACCT CACCGTCCAA GTCTCCCCAC AGGCGGCTGG CCTGAAGGAG
15201 GGCGACTACA TTGTGTCAGT GAATGGGCAG CCATGCAGGT GGTGGAGACA
15251 CGCGGAGGTG GTGACGGAGC TGAAGGCTGC GGGAGAGGCG GGCGCCAGCC
15301 TGCAGGTGGT GTCGCTGCTG CCCAGCTCTA GACTGCCCAG CTTGGTGAGC
15351 CCCTGGGGCC CCAGAGGGGC GGTCCCCAGC TTGCTGTCAC CACCCTGGCC
15401 CTGGGCCTGC CTTGGATGCT TGAGCAACAT TGGGAAGGGG AGGTGGGGCT
15451 GCAGGTAACC CTCCCTGGGC CGCCTCCTGG GCAGGGGCCA CCTGTGCTGT
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FIGURE 3E

Docket No.: CL001099 CIP DIV2
Serial No.: To be assigned
Inventors: Douglas RUSCH et al.
Title: ISOLATED HUMAN KINASE PROTEINS...

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15501 GGCCTCCATC TGGCAGCTCT TGCCCTGACC CCGAGGATGC TGCAGCCCAC
15551 CCCTCACTGG GCCTCTGTAT CCTCAGACTG GAGGCTTCTG GGCCAGGCGC
15601 TCCATCCCAG AGGTTTTCTC TACCCAGCAT GGCTGACCCA GGGTTGGGTG
15651 AAACCCATGG GCCCCTGCTA TGTGGCCACC CTGATGGGAG CCCCCAAACA
15701 AGCCCCCGAC GTGCCAGCCC CTCCCAGGTG GTTCTCACCC CTCCCAGACT
15751 GGCTGCAGGT GGGGACAGGC CAGCAGTGGC TGACCACAGT CTGTCTCTGT
15801 CCCTGCTGCA GGGGGACCGC CGGCCCGTCC TGCTGGGCCC CAGGGGGCTT
15851 CTAAGGAGCC AGAGGGAGCA TGGTTGCAAG ACCCCGGCAT CCACGTGGGC
15901 CAGTCCCCGG CCCCTCCTCA ACTGGAGCCG AAAGGCCCAG CAGGGCAAGA
15951 CTGGAGGCTG CCCCCAGCCC TGTGCCCCAG TGAAGCCAGC TCCGCCCTCA
16001 TCCTTGAAGC ACCCAGGGTG GCCGTGAGGG CCAGGATCCC TGCACGCCTC
16051 AGCCCTGGCT CCAGCTGGCA GCAAGCACCG AGCATGCCCT CCCCACCCAG
16101 AGGACCTCCG GGCAATGCCT GTCCCGCCTC ATGCTGGAGG CTGCCTCGGG
16151 CACCTGCCTG CCCATTAAAG ACTGGTCAGA CCTGTCTGAG CCCAGTGATG
16201 GGAGCTGTGG CCTCTTCACC CACACACAGA AGGATGCCAG TCCCTCTGTC
16251 GGTCTGAGGT CAGCTTCCTG GGGCTGCCCC ACCCTGAGGG CTCCTTACAG
16301 GGTGCTCCTC ACAGCCATCC CATCTGTACC CCCGGGCTCT GTCCACCCTG
16351 CTGCTGCCCT GGGCACAGAC CCTGAGGTCT CAGTCCTGCC TCCAGCCAAG
16401 TTTCTGCCTG GTGCCCAGTG ATTCCTGCTG GGCACCCCTT CGCTCACTGC
16451 CCCTCCACCA TGCAGCAGCC AGACACACCC ACAGCACCCG AAGACCTCTA
16501 GGCCGGGTCC CAGACATGGC CTTCCCCCAA AATACTTCCT GCTGTCCTGT
16551 CTGTGCACAG AGCAAGGGAC TCCCCACCTC TGCGCCCTGT GCTGGTCATC
16601 ATGGGCTCTG TGCTGGTCAA CCCAGCAAGT GTCCCGTTTG CCCAGGAGTC
16651 CCTGGTGTCG TGGCCCAGGT CTCATGGTGG CCCTAAGCCT GCCAGCCCTG
16701 CTGCCCGCCT TGCTGTCCTG CTCTGAGCAT GGGTGCCACC CTCCAGCTCC
16751 TGGGCGTGTC ACTTCTCTCT GAGCCTGGGG CCTGCATGGG CCCCCAGCCC
16801 TCCCCAGCCT GCTTGGGCCG CTCCTGCTGG CCTCCACAGG CCGTGAGCTG
16851 TCAGTGTCTC AAGCAGGGGA AGTGAGGGCT GCCTCCAGGC CTCCGTGTAC
16901 TGGGTGGACA ATGGCCCCCA AAGGCCGTCG GCAAGAACAC CACCTCCAGG
16951 ACCCCTACAG CAGTGGGCTC AGGACTTGGG CACCAAGAGG AGAGGGTGGG
17001 AAGGGCTGCA GAGTCAGGGC TGCACCCAAG AGGAGCCACG GAGCCGGAGC
17051 CGGAGCGGAG GCCCCCACCG AGGGCCCCAG GGCCTGGCAG GTTCCGGAAG
17101 AGACAGGGCC AGCGGGAGTC ATTCCCTGCA GCCACTAGGG GGCAGCCGCC
17151 ACCCGCTCAG CAGCCCTGGG AGGCGGCACG GGCAGGTGCG CCTTGGGAGG
17201 GCTGAGGCAA AGACCCCGGG TAGAAAGGCG GCCCCCAGCT CTGCGAGACC
17251 CCTGCCCTCT TGTCCAGTCC CTTCCGAGGG TCCGCAGGTG AGAGCAGCCT
17301 GCCCTGCATC CCAGGCTCTG GTTCCAGGGT CCAGGGCCCT GCGCTGCCAC
17351 CTCCCTCGTG CTTCAGCCAA GAAAATGGGG GTGCAAGTAG GGTGTTTGGG
17401 GTCCCAGAGA CGCAGGCGCC GCGGCGCGAT CTTCCTGGGC AGGAGGGCAG
17451 GGCTCCCCAA CCTGCCTGAG CCGGGGTGGG GGTCCAGGTC CCCCACTTGC
17501 CCTTGTGGGA AAATCCCTGT CTCAGCAGAA TGGGCCAAGG TCACGCAGGT
17551 CTCCCCAGCA CGTGTTAATT TGGTTAATAA AACTGTGGAT CAAGGAGGCC
17601 AGTAGGCACT AACTGGGGAT GACAGGGTGG CAGCCCTGTC TGGGAAGTGC
17651 AGGGACTCCC CACCTCCTGT GGCCTGTCGA GACCCAAGCT GGGGACAGAG
17701 CTGCCACCTG CCTCCTGCAT GGTGGGCGCC AGGCCACCAT AGCCTGGGGG
17751 AGGGGGCTTT TGCCCAGAGA GCACGCCTCT CCCCACCGCA GACCCCTGGG
17801 GTGCGCCCAA CCCGTCCCAC CCCTGCCCAC ACATGCCTCT CCCCTGGCTG
17851 CCACCAAGCC TGGGCCTGTG CTCCTGGCCC TGCCCTCTGC CCCAGGCCAT
17901 CTCCTCCCCT GCTGCCCCCC CCCCGCCGT CGTGTCCCTC TGCCACAGAG
17951 GGGGGGCCTC ACAGCTGAAG CCACACGTGG CTGGGACCTG GCTCCCGTCA
18001 CCGCCTCCGT CCTGTGAAGT GGAGGAAGCC TGGTGCACAG GGGTGCTGTG
18051 GCGATGTGGG GGGCCCTGAG GTCCTGCTGC CAGCCAGGGG GAGGGGGGCG
18101 GAGGTCCTGG GATCTGGGGT CCAGAGTTCT AGTCAAGGCA GGGCTGGGCA
18151 GGAGGGGGGT CCCCCTCCCC ACCTTCCACT TGGGGCTGCT CTCCAGAAGA
18201 GAAAGCGGAT GCCTACCAGC CCAGCCCCTC AGACTTGGAC CATGCCCCTC
18251 CGGCATCTGT GGGAGTCCTG CCAGACAGCC CCTGGGCTGC GGGAAGGGAC
18301 CGCGCCCCAT CCCATCCTCA TCCCTGCAGT AGCTGGTGGC TGCCTGCCCG
18351 GCGCAGGGGC CTGCTGAACA GGGGACTGCC CTGTCCAGCC CACCCACGGG
18401 ACTCCAAGTC CACACAGGCA GCAGAGTCGG CAGCGGTGGG CAGAGTGGGG
18451 GGGCATCACC ATGGCTCCTC AGGGACTGGT CAAGGGTGTG ATGCCTGGCC
18501 TGGCAGGACC TGCAGTTTCA CCCCCGGGGC CAGCTGTGGC CTGTGCCCCG
18551 CCAGAGGGCA GTGCAGCCCC TGGGGCCAGC ACACAGGAGG CGGCAGCTCA
```

FIGURE 3F

Docket No.: CL001099 CIP DIV2
Serial No.: To be assigned
Inventors: Douglas RUSCH et al.
Title: ISOLATED HUMAN KINASE PROTEINS...

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18601 GGGTCCTGTC CCATCTGCCC AGGCTAGGGA GCAAAGCAGG ATCAGGGCGA
18651 GGCTGCGAGG CTGGGGGAAG GCAGGGCTGG CCGCTGGGGA GCGCTCGGTC
18701 CGCAGGCTGT GCGGTGAGAG CCACTGGGTG AGGCTTCCCG GGGGGCACAG
18751 CTGCCCCGAG GGGCCGGCTC AAGGCTGTCC CTGCAGCAGC ACGTGTTGGT
18801 GCTTGCCTGC CCCCCCCGCA GCGCCACACC GCGGCCTCTG TGGAGCCCGT
18851 TCTCTTCCCT TGAAGTCCTG CTTGCGCACT CCTGGGCGTT TCTGGCTAGC
18901 ACCTTTTTGG CTTTTAGGGA CGGGTTAGTG TCCCTTCCTC AGATGGCCCG
18951 GCCTGGACAC ACCCCATGCA TGGGCCTTAG CCCCCACTTT CTGGGCCAGC
19001 CTTATCACTT TGGGCACTGT GTCAC (SEQ ID NO:3)
```

FEATURES:

```
Start:    3000
Exon:     3000-3059
Intron:   3060-7495
Exon:     7496-7654
Intron:   7655-8913
Exon:     8914-9029
Intron:   9030-9885
Exon:     9886-10014
Intron:   10015-10755
Exon:     10756-10831
Intron:   10832-11644
Exon:     11645-11722
Intron:   11723-12071
Exon:     12072-12196
Intron:   12197-12287
Exon:     12288-12454
Intron:   12455-12690
Exon:     12691-12884
Intron:   12885-13204
Exon:     13205-13361
Intron:   13362-13437
Exon:     13438-13551
Intron:   13552-13964
Exon:     13965-14159
Intron:   14160-14643
Exon:     14644-14720
Intron:   14721-14947
Exon:     14948-15094
Intron:   15095-15182
Exon:     15183-15344
Intron:   15345-15811
Exon:     15812-16024
Stop:     16025
```

CHROMOSOME MAP POSITION:
Chromosome 8

FIGURE 3G